

NINE NEW SPECIES OF *CORONIGONIELLA* FROM COLOMBIA AND PERU, SOUTH AMERICA (HEMIPTERA: CICADELLIDAE: CICADELLINAE)¹

Paul H. Freytag²

ABSTRACT: Nine new species are added to the genus *Coronigoniella* Young. They include *C. bartletti* from Peru, *C. cornuta*, *C. circula*, *C. elongata*, *C. ancora*, *C. bella*, *C. cerulata*, *C. extenda* and *C. undulata* from Colombia. The female seventh sternum of *C. caquetana* Young is also illustrated for the first time.

KEY WORDS: *Coronigoniella*, new species, Hemiptera, Cicadellidae, Cicadellinae, Colombia, Peru, South America

The genus *Coronigoniella* was described by Young (1977) and 18 species were included. Three species were added by Felix and Mejdalani (2003). At this time nine new species can be added from Colombia and Peru. All species have a similar appearance and differ mostly in size and genital characteristics.

The codes used in this paper are as follows: IHVL = Instituto von Humboldt, Villa de Leyva, Colombia; MUSM = Museo Nacional Mayor de San Marcos, Lima, Peru; and UKYL = University of Kentucky Collection, Lexington, Kentucky, USA.

The first four species described are in the group of species which have a lobe on the ventral margin of the male pygofer (see figure 8, 11, and 14). The described species in this group include *C. ostenta* Young 1977, known from Colombia, Ecuador, Panama and Peru; *C. metana* Young 1977, known from Colombia; *C. rubrahua* Young 1977, known from Peru and *C. caquetana* Young 1977, known from Colombia.

Coronigoniella bella Freytag, new species

Figures 8-10

Description: Length of males 5.5-5.6 mm., females unknown. Head with median posterior area nearly triangular, grayish green with black markings; anterior area extending to eyes, yellowish orange; eyes yellowish orange above margin, yellow below margin; face purplish yellow. Pronotum mostly green, anterior area yellowish green with black spots, lateral areas yellowish orange; pleural area yellowish green. Scutellum grayish green with black markings overall. Forewings green with costal edge yellowish orange to apical cells, which are also entirely yellowish orange as is the apex of the appendix; basal area of appendix transparent. Base of hind tibia yellowish orange, remainder of all legs and ventral area of body, yellow. Male genitalia: Pygofer (Fig. 8) broadly rounded apically, with lobe on ventral margin, with elongate, slender, acute process arising

¹ Received on November 27, 2007. Accepted on February 5, 2008.

² Department of Entomology, University of Kentucky, Lexington, Kentucky 40546 U.S.A. E-mail: freytag2104@windstream.net

from lobe, extending to apex of pygofer. Subgenital plate (Figs. 8 and 9) triangular, with bluntly pointed apex, extending nearly length of pygofer. Style (Fig. 9) short, acute at apex. Connective (Fig. 9) T-shaped. Aedeagus (Fig. 8 and 10) tubular, nearly straight, without processes, bifurcate at apex.

Type Data: Holotype male: Colombia: Putumayo, PNN La Paya, Cabaña La Paya, 0°2'S 75°12'W, 330 m., Malaise, XI-15-30-2001, R. Cobete, M 2653 (IHVL). Paratype male: Colombia: Meta, PNN Sumapaz, Qda. La Cristalina, 3°48'N 73°50'W, 614 m., Red, III-27-28-2004, D. Arias & T. Arias, M 4339 (UKYL).

Remarks: This species is closest to *C. caquetana* as the aedeagus lacks processes in both species. It differs in that the aedeagus is straight, not roundly angled as in *C. caquetana*. Also, the notch on the ventral margin of the pygofer is near the middle whereas in *C. caquetana* it is closer to the base (as shown in figure 14). It is named for its beautiful appearance.

Coronigoniella circula Freytag, new species

Figures 1, 4, and 11-13

Description: Length of males 6.8-7 mm., females 7-7.2 mm. Head (Fig. 1) with median posterior area grayish green with black markings; anterior margin to eyes, reddish orange; without black median spot on anterior margin; eyes reddish orange above margin, green below margin; face yellow. Pronotum (Fig. 1) mostly green, with anterior area yellowish green with black markings; lateral areas reddish orange; plural area greenish yellow. Scutellum (Fig. 1) yellowish green, with black speckles overall. Forewing bright green, with bold reddish orange along costal margin to outer apical cell; between costal margin and remainder of wing a line of blue from base to apical cell; appendix, inner apical cells, transparent. Hind tibia with base reddish orange, otherwise all legs and ventral surface of body mostly yellowish orange. Male genitalia: Pygofer (Fig. 11) elongate, acute at apex, with lobe on ventral margin, with elongate, slender, acute process arising from lobe, extending to apex of pygofer. Subgenital plate (Figs. 11 and 12) triangular, broader at base than *C. bella*, narrowing to nearly acute apex, shorter than length of pygofer. Style (Fig. 12) thin, curving to acute apex. Connective (Fig. 12) T-shaped. Aedeagus (Figs. 11 and 13) tubular, curving dorsad, with pair of curved, short processes at apex. Female seventh sternum (Fig. 4) nearly square, with posterior margin roundly emarginate on each side of median spine.

Type Data: Holotype male: Colombia: Norte de Santander, PNN Tamá Mun Toledo, Vda. La Camacha, Pozo Negro, 7°21'N 72°28'W, 2203 m., Malaise, XI-14-21-2003. C. Leal, M 4052 (IHVL). Paratypes: One male, one female, same data as holotype, except 2213 m., M 4049 (UKYL); two males, one female, same data as holotype, except X-23-XI-2-2003, M 4029 (one male, UKYL, one male, one female IHVL); one male, same data as holotype, except Anu Los Estoraques, Qda. La Media, 8°13'N 73°14'W, 1480 m., Malaise, X-15-29-2003, J. Vargus, M 4089 (IHVL)

Remarks: This species is closest to *C. ostenta* and *C. rubrahua*. It differs by having sharply pointed styles and very short curved processes on the aedeagus, as well as a pointed apex to the pygofer. It is named for the gradually curving aedeagus.

Coronigoniella ancora Freytag, new species

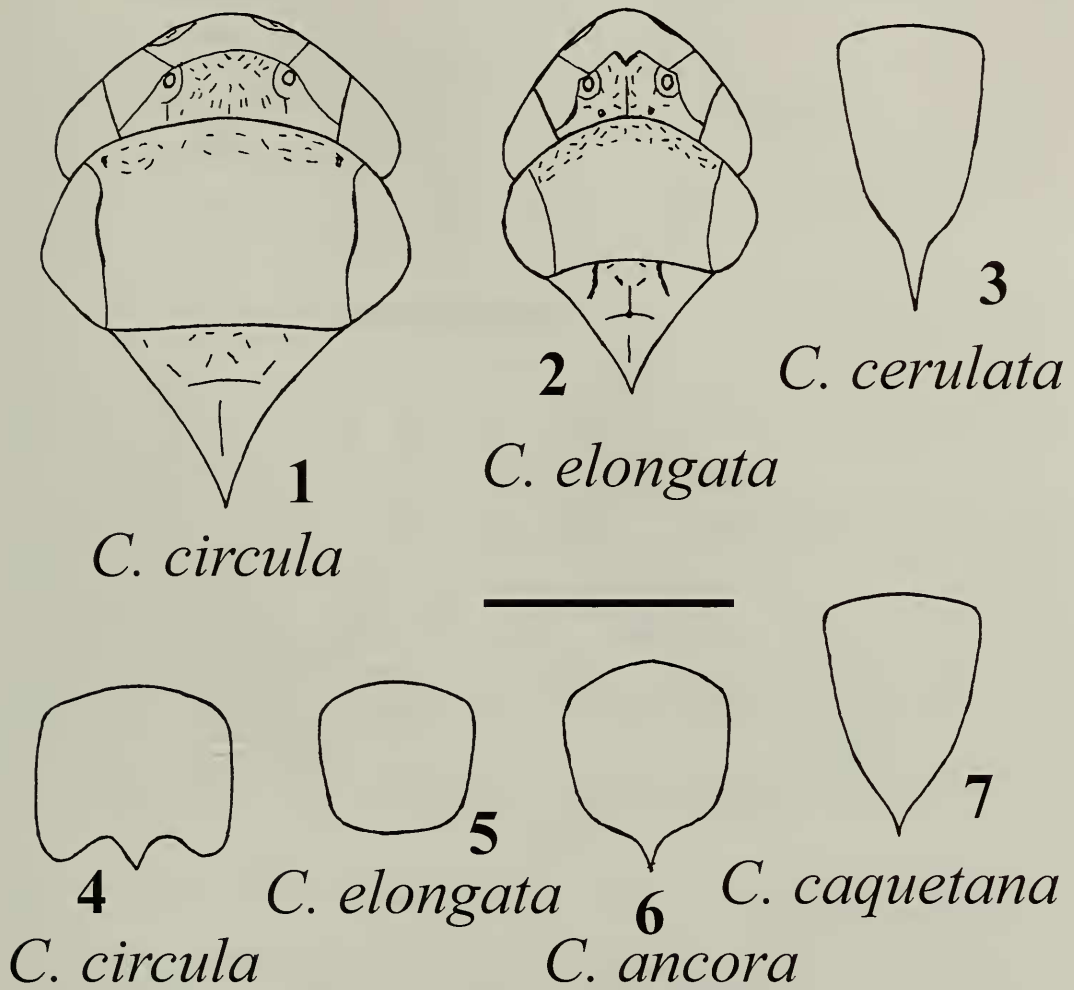
Figures 6 and 14-16

Description: Length of males 5.9-6 mm., females 6-6.1 mm. Head median posterior area grayish green, marked with black, nearly triangular; anterior area orange to eyes; black spot not present on anterior margin; face mostly yellow; eyes orange above margin, green below margin. Pronotum mostly green, with anterior margin grayish green with black markings, lateral areas, orange; plural area mostly yellow. Scutellum green, with black markings overall. Forewing mostly green with orange along costal margin to outer apical cell; between costal margin and remainder of wing a band of blue; appendix and inner apical cells, transparent. Hind tibia with base orange, otherwise all legs and ventral surface of body, yellow. Male genitalia: Pygofer (Fig. 14) rounded at apex, with lobe on ventral margin, with long slender, acute process, extending to apex of pygofer. Subgenital plate (Figs. 14 and 15) triangular, narrowing to acute apex, two thirds length of pygofer. Style (Fig. 15) sinuate, acute at apex, over half length of subgenital plate. Connective (Fig. 15) T-shaped. Aedeagus (Figs. 14 and 16) tubular, curved dorsad at base, then straight, with subapical pair of short processes, curved basad, acute at apex. Female seventh sternum (Fig. 6) little longer than width, with posterior margin with median, short spine.

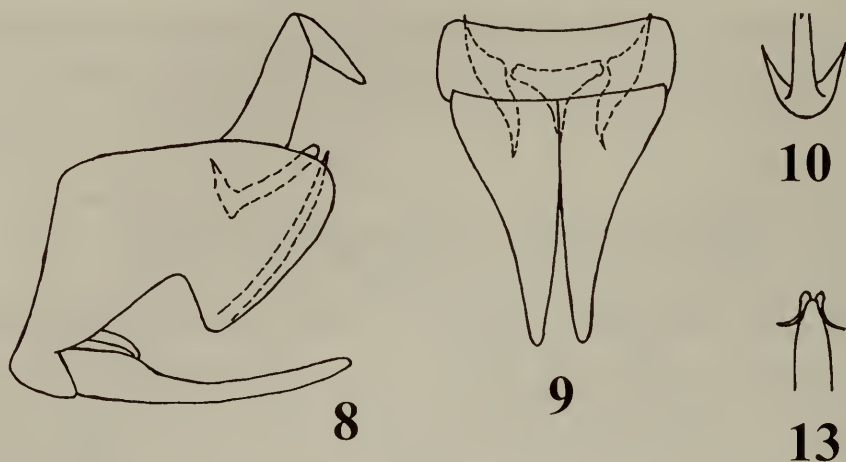
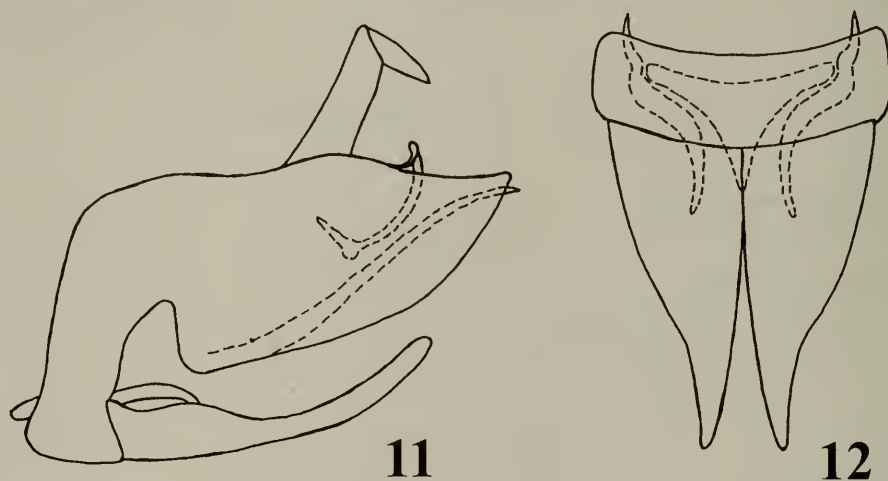
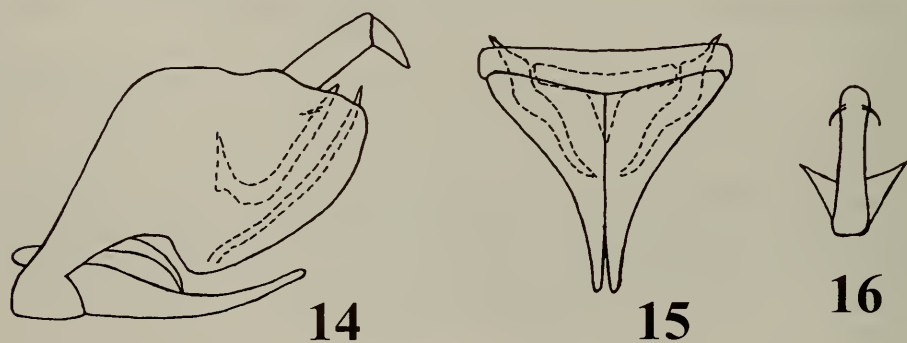
Type Data: Holotype male: Colombia: Magdalena, PNN Tayrona, Cerro San Lucas, La Antena, 11°20'N 74°2'W, 700 m., Malaise, VII-19-24-2002, M. Sharkey, D. Arias & E. Torres, M 3258 (IHVL). Paratypes: Two males, two females, same data as holotype (one male, one female, UKYL; one male, one female, IHVL).

Additional Specimens: One male, same data as holotype, except Borde Camino, Pueblito-Cañaveral, 30 m., Red, VII-18-25-2002, M 3268 (IHVL); one male, same data as holotype, except 550 m., I-11-16-2003, C. Sarmiento, M 3425 (IHVL); three females, same data as last, except M 3426 (IHVL); one male, same data as last, except 450 m., 11°19'N 73°59'W, I-11-16-2003, M 3428 (IHVL); one female, same data as last, except 600 m., I-6-11-2003, M 3429 (IHVL); and one male, same data, except 500 m., M 3430 (IHVL).

Remarks: This species is closest to *C. ostenta*. It differs from that species in having an aedeagus that the shaft is straighter with very small curved processes. This species is named for the aedeagus looking like an anchor.



Figures 1 and 2. Dorsal views of head, thorax and scutellum. Fig. 1 *Coronigoniella circula* n. sp. Fig. 2. *C. elongata* n.sp. Figures 3-7. Ventral view of last female abdominal sternum. Fig. 3. *C. cerulata* n. sp. Fig. 4. *C. circula* n. sp. Fig. 5. *C. elongata* n. sp. Fig. 6. *C. ancora* n. sp. and 7. *C. caquetana* Young. All drawn to the same scale which equals 1 mm.

*C. bella**C. circula**C. ancora*

Figures 8-16. Male genital structures. Figs. 8-10. *Coronigoniella bella* n. sp. Figs. 11-13. *C. circula* n. sp. Figs. 14-16. *C. ancora* n. sp. Figs. 8, 11, 14. Lateral view of genital capsule (setae not shown). Figs. 9, 12, 15. Ventral view of valve, subgenital plates, styles and connective. Figs. 10, 13, 16. Posterior ventral view of aedeagus. All drawn to the same scale which equals 0.5 mm.

***Coronigoniella bartletti* Freytag, new species**

Figures 17-19

Description: Length of male 6 mm., female unknown. Head with median posterior area triangular, grayish green with black markings; anterior area to eyes, orange; eyes orange above margin, greenish yellow below margin; face yellow. Pronotum mostly green, with anterior area yellowish green marked with black speckles, lateral areas, orange; plural area greenish yellow. Scutellum yellowish green, with black markings overall. Forewing green, with costal area orange, extending to and over apical cells; appendix transparent. Hind tibia with base orange, remainder of legs and ventral surface of body, yellow. Male genitalia: Pygofer (Fig. 17) rounded at apex, with extensive lobe on ventral margin, with long, slender, acute process, extending to near apex of pygofer. Subgenital plate (Figs. 17 and 18) triangular, long, narrow, nearly acute at apex, half length of pygofer. Style (Fig. 18) short, curving to acute apex. Connective (Fig. 18) T-shaped, longer than styles. Aedeagus (Fig. 17 and 19) tubular, without processes, U-shaped in lateral view, with a small bifurcate apex.

Type Data: Holotype male: Peru: Madre de Dios, Tambopata Res. Zone, Tambopata Research Cntr. On Rio Tambopata, 13°08'30"S 69°36'502"W, 190 m., X-3-7-2004, Malaise, C. R. Bartlett (MUSM).

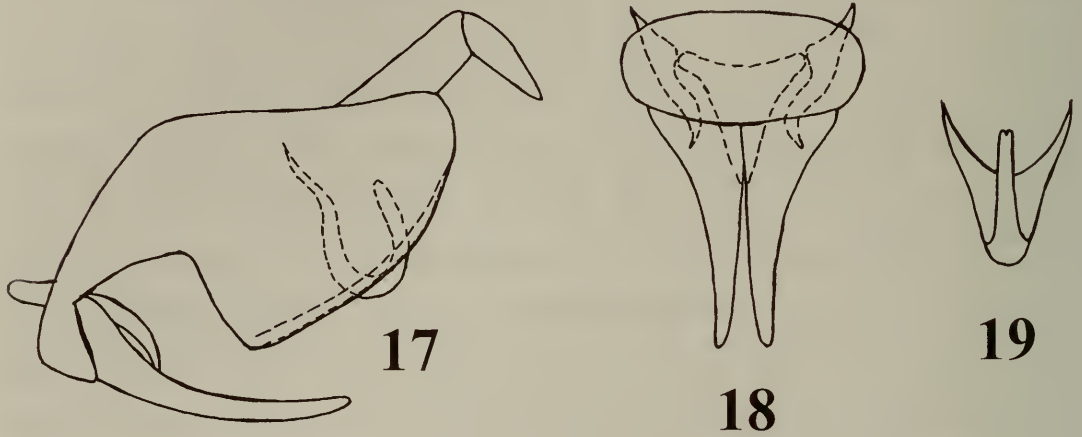
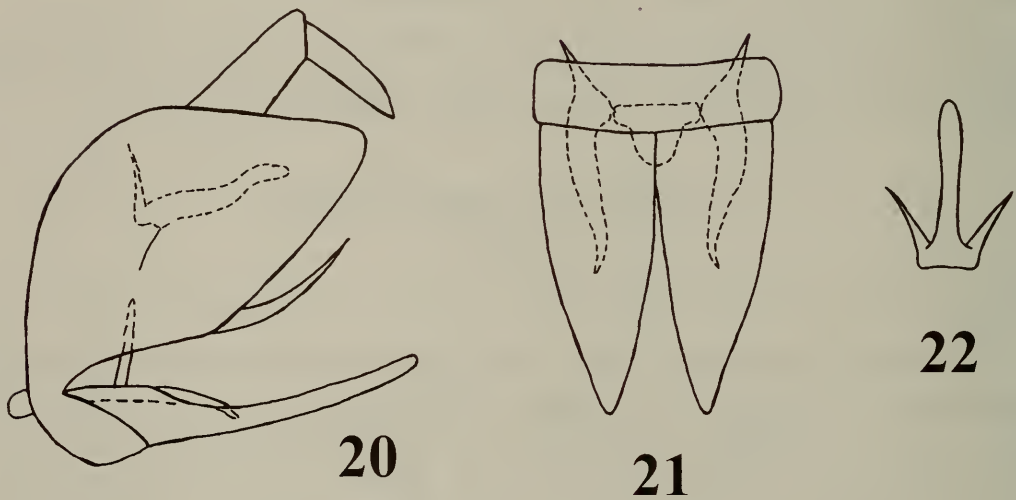
Remarks: This species is closest to *C. caquetana*. It differs by having a U-shaped aedeagus in lateral view, while in *C. caquetana* the shaft is at a right angle to the base. This species is named for the collector of this species.

***Coronigoniella caquetana* Young**

Figure 7

Coronigoniella caquetana Young 1977, p. 1017.

This species is included to illustrate the female seventh sternum, which was not included in the original description. The female seventh sternum (Fig. 7) is similar to other described species, with the length longer than the width, narrowing on posterior margin to median spine. This species was described from Caquetá, Colombia. It is now known from Amazonas, Caquetá, Putumayo and Vaupés, Colombia.

*C. bartletti**C. cerulata*

Figures 17-22. Male genital structures. Figs. 17-19. *Coronigoniella bartletti* n. sp. Figs. 20-22. *C. cerulata* n.sp. Figs. 17, 20. Lateral view of genital capsule (setae not shown). Figs. 18, 21. Ventral view of valve, subgenital plates, styles and connective. Figs. 19, 22. Posterior ventral view of aedeagus. All drawn to same scale which equals 0.5 mm.

The next species belongs in the group in which the male pygofer does not have a ventral lobe. Many of the described species belong to this group including the type of the genus, *C. spinosa* (Osborn) 1926. Included are *C. lineola* (Osborn), from Colombia and Venezuela; *C. formosula* Young, from Colombia, Costa Rica, Panama and Peru; *C. baguensis* Young, from Peru; *C. beieri* Young, from Peru; *C. bonita* Young, from Brazil; *C. maldonadoi* Young, from Venezuela; *C. marginella* (F.), from French Guiana; *partita* Young, from Ecuador; *C. rohweri* Young, from Ecuador; *C. rubiella* Young, from Costa Rica and Panama; *C. spinosa* (Osborn), from Brazil; *C. tiarae* Young, from Trinidad and Tobago and Venezuela and *C. yara* Young, from Brazil.

***Coronigoniella cerulata* Freytag, new species**

Figures 3 and 20-22

Description: Length of males 6.8-7 mm., females 7 mm. Head with median posterior area triangular, grayish green, marked with black; anterior area orange; small black spot on anterior margin; eyes orange above margin, greenish yellow below margin; face yellow. Pronotum mostly green, with anterior area greenish yellow with black speckles; lateral areas, orange; plural areas greenish yellow. Scutellum greenish yellow, with black markings overall. Forewing mostly brownish green, with costal margin orange to base of outer apical cell; appendix and apical cells smoky transparent, two of the apical veins lined with orange. Hind tibia with base, orange, otherwise legs and ventral surface of body, yellow. Male genitalia: Pygofer (Fig. 20) bluntly pointed at apex, without lobe on ventral margin, with sharply acute process from middle of ventral margin, extending toward apex of pygofer. Subgenital plate (Figs. 20 and 21) roundly triangular, bluntly acute at apex, same length as pygofer. Style (Fig. 21) two-thirds length of subgenital plate, curving to acute apex. Connective (Fig. 20 and 21) T-shaped, bent at right angle near base, extending dorsad. Aedeagus (Fig. 20 and 22) tubular, without processes, sinuate in lateral view, with rounded apex, apodemes connect to anal tube. Female seventh sternum (Fig. 3) twice as long as width, narrowing on posterior margin to prominent median spine.

Type Data: Holotype male: Colombia: Tolima, Mun. Fresno, Vda. Colombia Fea. Las Perlas, 5°12'N 75°2'W, 1508 m., Pan trap, XII-12-26-2002, T. Arias, D. Arias & S. Arias, M 112 (IHVL). Paratypes: 11 males, 5 females, same data as holotype (5 males, 2 females, UKYL; 6 males, 3 females, IHVL).

Additional Specimen: One male, same data as holotype, except XII-23-26-2002. M 113 (IHVL).

Remarks: This species is close to *C. tiarae* in many aspects. It differs from *C. tiarae* by a pointed style and a wide, gradually angled subgenital plate. It is named for the darker color which looks somewhat bluish.

The next four species belong in the group in which the male pygofer is elongate ventrally and the last abdominal tergum or the last two terga are connected above the base of the genital capsule. One described species belongs to this group, *C. truncata* Young 1977, known from Peru. The species being described differ from *C. truncata* in two major characters, The four species below have a male pygofer without processes, and the aedeagus has a pair of basal processes, whereas *C. truncata* has a male pygofer process, and the aedeagus does not have basal processes.

***Coronigoniella extenda* Freytag, new species**

Figures 23-25

Description: Length of male 5.9 mm, female unknown. Head with median posterior area nearly triangular, anterior median margin emarginate, grayish green with black markings; anterior area to eyes, orange; eyes orange above margin, green below margin; face, yellow. Pronotum mostly green, with anterior area speckled with black, lateral areas, orange; plural areas yellowish green. Scutellum yellowish green, with black markings overall. Forewing green, costal margin, orange, interrupted near base, also near base of antepical cell with black, orange extending over base of outer apical cell; apex of apical cells and appendix transparent. Hind tibia with base orange, remainder of legs and ventral surface of body, yellow. Male genitalia: Pygofer (Fig. 23) long, without process, narrowing near rounded apex. Subgenital plate (Figs. 23 and 24) triangular, one-third length of pygofer. Style (Fig. 24) short, curving to acute apex. Connective (Fig. 24) T-shaped. Aedeagus (Figs. 23 and 25) with shaft long, tubular, with basal pair of long processes, curving toward median, extending just beyond shaft.

Type Data: Holotype male: Colombia: Vaupés, RN Mosiro-Itajura (Caparú), Centro Ambiental, 1°4'S 69°31'W, 60 m., Malaise, XII-1-8-2003, J. Pinzón, M 4442 (IHVL).

Remarks: This species differs from all other species in that the last two (7th and 8th) terga are above the base of the genital capsule.

***Coronigoniella undulata* Freytag, new species**

Figures 26-28

Description: Length of male 5 mm., female unknown. Head with median posterior area nearly rectangular, anterior median margin emarginate, grayish green with black markings; anterior area to eyes, orange; eyes orange above margin, green below margin; face yellow. Pronotum mostly green, anterior area grayish green with black speckles, lateral areas orange, plural area green. Scutellum yellowish green with black markings. Forewing green, costal margin orange to apical cells, than to appendix apex, remainder of appendix transparent. Hind tibia with base orange, remainder of legs and ventral surface of body, yellow. Male genitalia: Pygofer (Fig. 26) long, without process, rounded at apex. Subgenital plate (Figs. 26 and 27) triangular, long as pygofer, narrowing to nearly acute

apex. Style (Fig. 27) short, bent at right angle near middle then curving to a bluntly acute apex. Connective (Fig. 27) T-shaped, shorter than styles. Aedeagus (Figs. 26 and 28) with shaft short, tubular, with basal pair of long processes, nearly straight, extending twice length of shaft.

Type Data: Holotype male: Colombia: Vaupés, RN Mosiro-Itajura (Caparú), Centro Ambiental, 1°4'S 69°31'W, 60 m., Red, I-20-II-1-2003, M. Sharkey & D. Arias, M 3387 (IHVL).

Remarks: This species differs from *C. truncata* in lacking the male pygofer process, and the aedeagus having a pair of lateral processes that are twice as long as the shaft.

Coronigoniella elongata Freytag, new species

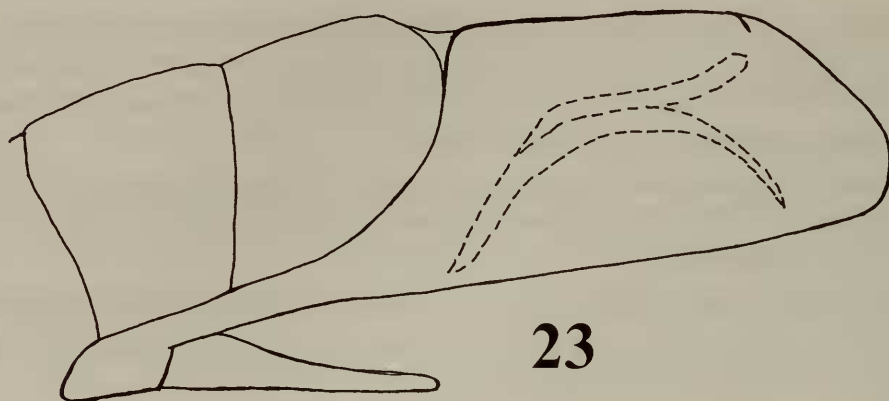
Figures 2, 5, and 29-31

Description: Length of males 5 mm., females 5-5.2 mm. Head (Fig. 2) with median posterior area grayish green with black markings, anterior margin of area rounded with median emargination; anterior area to eyes, orange; eyes orange above margin, greenish yellow below margin, face yellow. Pronotum (Fig. 2) mostly green, anterior area grayish green with black speckles, lateral areas orange, plural areas greenish yellow. Scutellum (Fig. 2) yellowish green with black markings overall. Forewing green with costal margin orange, broken near base of anteapical cell, extending over apical cells, appendix transparent. Base of all tibia, orange, remainder of legs and ventral surface of body, yellow. Male genitalia: Pygofer (Fig. 29) long, rounded at apex. Subgenital plate (Figs. 29 and 30) triangular, long, extending almost to apex of pygofer, bent dorsad near apex. Style (Fig. 30) very long, nearly as long as subgenital plate, thin, acute at apex. Connective (Fig. 30) T-shaped, short. Aedeagus (Figs. 29 and 31) with shaft short, tubular, with basal pair of processes, twice as long as shaft, straight, acute at apex. Female sixth sternum (Fig. 5) nearly square, posterior margin without median spine.

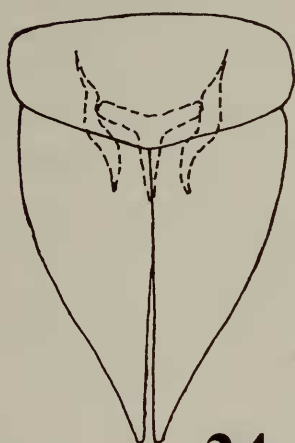
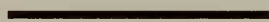
Type Data: Holotype male: Colombia: Amazonas, PNN Amacayacu, Cabaña Lorena, 3°0'S 69°59'W, 210 m., VIII-27-2001, Red, D. Campos, M 2234 (IHVL). Paratypes: One male, same data as holotype (UKYL); one male, same data as holotype, except IX-1-15-2001, Malaise, D. Deaza, M 2203 (IHVL); and one female, same data as holotype, except VIII-27-IX-1-2001, Malaise, D. Campos, M 2238 (IHVL).

Additional Specimen: One female, Colombia: Putumayo, PNN La Paya, Salao Grande, 0°1'S 74°56'W, 330 m., Red, XI-22-2001, D. Campos, M 2087 (IHVL).

Remarks: This species differs from *C. undulata* in having very long styles.



23

C. extenda

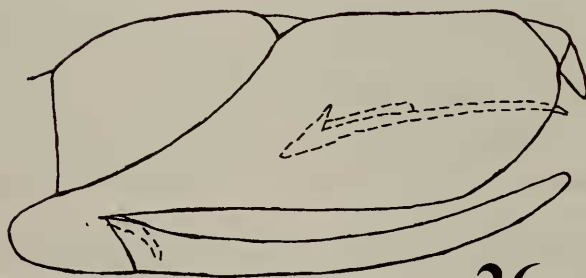
24



25



28



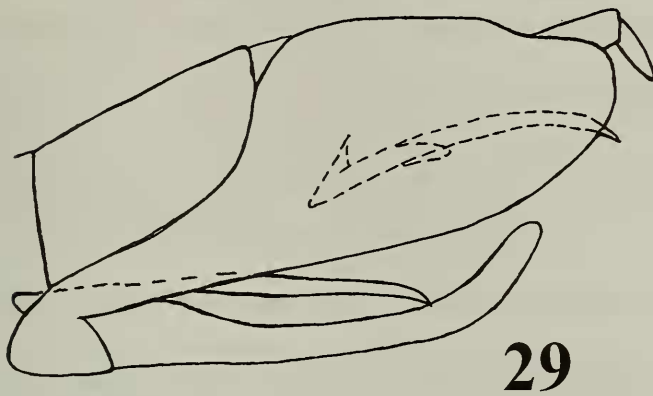
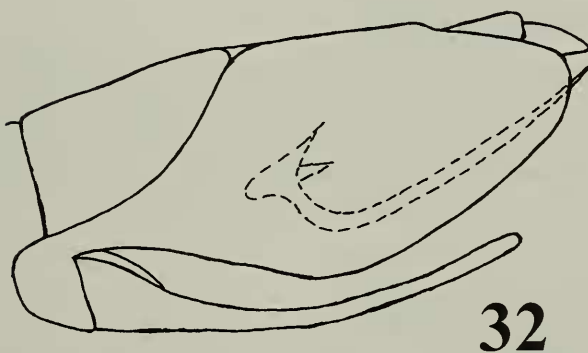
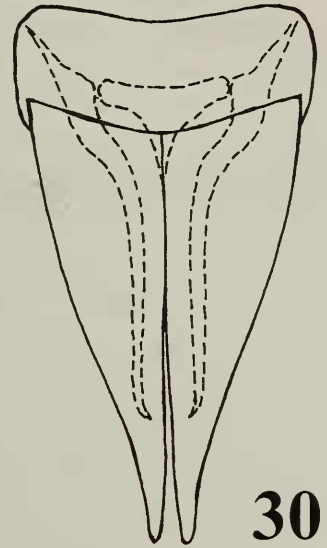
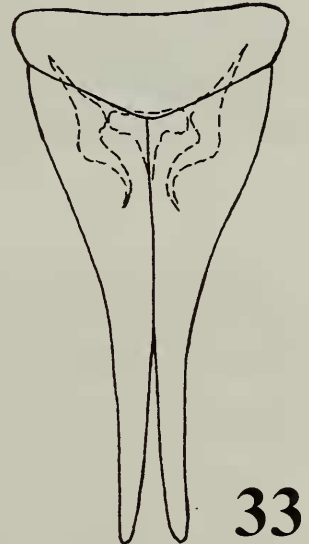
26



27

C. undulata

Figures 23-28. Male genital structures. Figs. 23-25. *Coronigoniella extenda* n. sp. Figs. 26-28. *C. undulata* n. sp. Figs. 23, 26. Lateral view of genital capsule (setae not shown). Figs. 24, 27. Ventral view of valve, subgenital plates, styles and connective. Figs. 25, 28. Ventral view of aedeagus. All drawn to the same scale which equals 0.5 mm.

*C. elongata**C. cornuta*

Figures 29-34. Male genital structures. Figs. 29-31. *Coronigoniella elongata* n. sp. Figs. 32-34. *C. cornuta* n. sp. Figs. 29, 32. Lateral view of genital capsule (setae not shown). Figs. 30, 33. Ventral view of valve, subgenital plates, styles and connective. Figs. 31, 34. Ventral view of aedeagus. All drawn to the same scale which equals 0.5 mm.

***Coronigoniella cornuta* Freytag, new species**

Figures 32-34

Description: Length of males 5 mm., female unknown. Head with median posterior area mostly rectangular with anterior median margin emarginated, grayish green with black markings; anterior area to eyes orange; eyes orange above margin, yellow below margin; face yellow. Pronotum mostly yellowish green, with anterior area grayish green with black speckles; lateral areas orange; plural areas yellow. Scutellum yellow green with black marking overall. Forewing green, with costal margin orange, interrupted near base of anteapical cell with black, extending over apical cells and apex of appendix; some blue along orange margin and anteapical cells; base of appendix transparent. Base of all tibia, orange, remainder of legs and ventral surface of body, yellow. Male genitalia: Pygofer (Fig. 32) long, apex narrowing but rounded. Subgenital plate (Figs. 32 and 33) triangular, long, narrow apical half, extending nearly to apex of pygofer. Style (Fig. 33) short, bent at right angle near middle then curving to acute apex. Connective (Fig. 33) short, T-shaped. Aedeagus (Figs. 32 and 34) with shaft short, narrowing to nearly pointed apex, with pair of long spinelike basal processes, bent near base, extending nearly straight three times length of shaft, short acute apodemes visible in ventral view.

Type Data: Holotype male: Colombia: Vaupés, RN Mosiro-Itajura (Caparú), Centro Ambiental, 1°4'S 69°31'W, 60 m., Red, I-20-II-1-2003, M. Sharkey & D. Arias, M 3387 (IHVL). Paratype male: Same data as holotype, except Antigua Cabaña, Malaise, II-25-III-3-2003, J. Pinzón, M 3618 (UKYL).

Remarks: This species differs from *C. undulata* by having the male aedeagus with a very short shaft that appears triangular and divided into two halves.

ACKNOWLEDGMENTS

I thank Michael J. Sharkey, Department of Entomology, University of Kentucky, whose National Science Foundation Grant No. DEB 0205982 made it possible to study these interesting species from Colombia. Also thanks to Charles R. Bartlett, Department of Entomology and Applied Ecology, University of Delaware, for the specimens he provided from his collecting in Peru, and Dicky S. Yu, Department of Entomology, University of Kentucky for the improvements to the illustrations.

LITERATURE CITED

- Felix, M. and G. Mejdalani. 2003. Two new species of *Coronigoniella* Young from Brazil with taxonomic and distributional notes on the genus (Hemiptera: Cicadellidae: Cicadellinae). *Studies on Neotropical Fauna and Environment* 38 (3): 235-243.
- Young, D. A. 1977. Taxonomic study of the Cicadellinae (Homoptera: Cicadellidae). Part 2. New World Cicadellini and the genus *Cicadella*. North Carolina Agricultural Experiment Station. Technical Bulletin 239. 1135 pp.